

### Amendments to the Claims

1. (Previously Presented) A method for transmitting data units from a node in a communications network, the node including one or more network interfaces, each of the one or more network interfaces being associated with at least one output queue, the method comprising:
  - identifying one of the one or more network interfaces for transmitting a first data unit;
  - storing the first data unit in an output queue of the at least one output queue associated with the identified network interface;
  - retrieving, for the identified network interface, the first data unit from the output queue associated with the identified network interface;
  - subsequent to storing the first data unit in the output queue, determining one of the one or more network interfaces from which the first data unit is to be transmitted; and
  - forwarding the data unit to the determined network interface for transmission when the determined network interface is the identified network interface.
2. (Original) The method of claim 1 wherein the communications network is an ad hoc network.
3. (Original) The method of claim 1 further comprising: determining, prior to storing the first data unit, whether the first data unit is a multicast data unit.
4. (Previously Presented) The method of claim 3 further comprising: determining, when the first data unit is not a multicast data unit, a priority for the first data unit; and storing the first data unit in a sub-queue within the output queue associated with the identified network interface based on the determined priority.
5. (Previously Presented) The method of claim 3 further comprising: determining, when the first data unit is a multicast data unit, a priority for the first data unit; and storing the first data unit in a sub-queue within an output queue of the at least one output queue associated with each of the one or more network interfaces based on the determined priority.
6. (Previously Presented) The method of claim 3 further comprising: determining, when the first data unit is a multicast data unit, a priority for the first data unit; and storing the first data unit in a sub-queue within an output queue of the at least one output queue associated with at least one of the one or more network interfaces based on the determined priority.

7. (Original) The method of claim 3 wherein, when the first data unit is a multicast data unit, the determining one of the one or more network interfaces includes: identifying a next node to receive the first data unit from a list of next nodes, and determining the one of the one or more network interfaces based on the identified next node.

8. (Previously Presented) The method of claim 7 further comprising: storing, prior to the forwarding, a copy of the first data unit in the output queue associated with the identified network interface when the determined network interface is the identified network interface, and recording a current position in the list of next nodes.

9. (Original) The method of claim 7 further comprising: dropping the first data unit when no next node is identified from the list of next nodes.

10. (Previously Presented) The method of claim 1 further comprising: assigning a sequence number to the first data unit, and wherein the storing the first data unit includes: storing the sequence number with the first data unit in the output queue associated with the identified network interface.

11. (Previously Presented) The method of claim 10 further comprising: storing the first data unit in an output queue of the at least one output queue associated with the determined network interface when the determined network interface is different from the identified network interface.

12. (Previously Presented) The method of claim 11 wherein the storing the first data unit in the output queue associated with the determined transmission interface includes: storing the first data unit in the output queue associated with the determined transmission interface based on the sequence number assigned to the first data unit.

13. (Original) The method of claim 10 further comprising: discarding the first data unit when the determined network interface is different from the identified network interface.

14. (Previously Presented) A network device comprising:

one or more output queues, each of the one or more output queues storing one or more data units;

one or more network interfaces, each of the one or more network interfaces being associated with at least one of the one or more output queues and being configured to forward the one or more data units to other network devices; and

a forwarding module configured to:

receive a first data unit,

identify one of the one or more network interfaces for transmitting the first data unit,

store the first data unit in an output queue of the at least one output queue associated with the identified network interface,

retrieve the first data unit from the output queue associated with the identified network interface,

subsequent to storing the first data unit in the output queue, determine one of the one or more network interfaces for transmitting the first data unit, and

forward the first data unit to the determined network interface when the determined network interface corresponds to the identified network interface.

15. (Original) The network device of claim 14 wherein the forwarding module is further configured to: determine, prior to storing the first data unit, whether the first data unit is a multicast data unit.

16. (Previously Presented) The network device of claim 15 wherein the forwarding module is further configured to: determine, when the first data unit is not a multicast data unit, a priority for the first data unit, and store the first data unit in a sub-queue within the output queue associated with the identified network interface based on the determined priority.

17. (Previously Presented) The network device of claim 15 wherein the forwarding module is further configured to: determine, when the first data unit is a multicast data unit, a priority for the first data unit; and store the first data unit in a sub-queue within an output queue of the at least one output queue associated with each of the one or more network interfaces based on the determined priority.

18. (Original) The network device of claim 15 wherein, when determining the one of the one or more network interfaces, the forwarding module is, when the first data unit is a multicast data unit, further configured to: identify a next node to receive the first data unit from a list of next nodes, and determine the one of the one or more network interfaces based on the identified next node.

19. (Previously Presented) The network device of claim 18 wherein the forwarding module is further configured to: store the first data unit in the output queue associated with the identified network interface when the determined network interface is the identified network interface, and record a current position in the list of next nodes.

20. (Original) The network device of claim 18 wherein the forwarding module is further configured to: discard the first data unit when no next node is identified in the list of next nodes.

21. (Previously Presented) The network device of claim 14 wherein the forwarding module is further configured to: assign a sequence number to the first data unit, and wherein, when storing the first data unit, the forwarding module is configured to: store the sequence number with the first data unit in the output queue associated with the identified network interface.

22. (Previously Presented) The network device of claim 21 wherein the forwarding module is further configured to: store the first data unit in an output queue of the at least one output queue associated with the determined network interface when the determined network interface is different from the identified network interface.

23. (Previously Presented) The network device of claim 22 wherein, when storing the first data unit in the output queue associated with the determined network interface, the forwarding module is configured to: store the first data unit in the output queue associated with the determined network interface based on the sequence number assigned to the first data unit.

24. (Previously Presented) The network device of claim 15 wherein the forwarding module is further configured to: determine, when the first data unit is a multicast data unit, a priority for the first data unit, and store the first data unit in a sub-queue within an output queue of the at least one output queue associated with at least one of the one or more network interfaces based on the determined priority.

25. (Previously Presented) A system for transmitting data units from a node in a communications network, the node including one or more network interfaces, each of the one or more network interfaces being associated with at least one output queue, the system comprising:

means for identifying one of the one or more network interfaces for transmitting a data unit;

means for storing the data unit in an output queue of the at least one output queue associated with the identified network interface;

means for retrieving, for the identified network interface, the data unit from the output queue associated with the identified network interface;

means for separately determining, subsequent to storing the data unit in the output queue, one of the one or more network interfaces from which the data unit is to be transmitted; and

means for sending the data unit to the determined network interface for transmission when the determined network interface corresponds to the identified network interface.

26. (Previously Presented) A computer-readable medium containing a plurality of instructions that, when executed by at least one processor, causes the at least one processor to perform a method for transmitting data units in a communications network, the method comprising:

identifying a first one of a group of one or more network interfaces for transmitting a data unit;

storing the data unit in an output location corresponding to the first network interface;

retrieving, for the first network interface, the data unit from the output location;

identifying, after retrieving the data unit, a second one of the group of one or more network interfaces from which the data unit is to be transmitted; and

forwarding the data unit to the second network interface for transmission when the second network interface corresponds to the first network interface.

27. (Previously Presented) The computer-readable medium of claim 26 further comprising: determining whether the data unit is a multicast data unit, and wherein the method further comprises: determine, when the first data unit is a multicast data unit, a priority for the first data unit, and store the first data unit in an output location associated with at least one of the one or more network interfaces based on the determined priority.

28. (Previously Presented) A method for transmitting data units from a node that includes one or more network interfaces, comprising:

identifying a first one of the one or more network interfaces from which to transmit a data unit to another node when the data unit is received by the node or generated by the node;

subsequent to identifying the first one of the network interfaces, determining a second one of the one or more network interfaces to transmit the data unit when the data unit is ready to be transmitted by the node; and transmitting the data unit via the second network interface when the second network interface is the same as the first network interface.

29. (Previously Presented) The method of claim 28 further comprising: storing the data unit in an output queue associated with the first network interface; and storing the data unit in an output queue associated with the second network interface when the second network interface is different from the first network interface.

30. (Previously Presented) The method of claim 28 further comprising: determining whether the data unit is a multicast data unit; and storing, when the data unit is a multicast data unit, the data unit in an output queue associated with each of the one or more network interfaces.

31. (Original) The method of claim 28 wherein the data unit is a multicast data unit, and wherein the method further comprises: storing, for each neighboring node, information indicating whether the multicast data unit has been transmitted to that neighboring node.

32. (Previously Presented) A network device comprising:

one or more network interfaces configured to transmit data units; and  
a forwarding module configured to:

identify one of the one or more network interfaces to transmit a data unit to another node when the data unit is received by the network device or generated by the network device,

determine, subsequent to identifying one of the network interfaces, one of the one or more network interfaces to transmit the data unit when the data unit is ready to be transmitted by the network device, and

forward the data unit to the determined network interface for transmission when the determined network interface is the identified network interface.

33. (Previously Presented) The network device of claim 32 further comprising: one or more output queues, each of the one or more output queues being associated with one of the one or more network interfaces and configured to store data units for the associated network interface.

34. (Previously Presented) The network device of claim 33 wherein the forwarding module is further configured to: store the data unit in an output queue of the one or more output queues associated with the identified network interface, and store the data unit in an output queue of the one or more output queues associated with the determined network interface when the determined network interface is not the identified network interface.

35. (Previously Presented) The network device of claim 33 wherein the forwarding module is further configured to: store the data unit in an output queue of the one or more output queues associated with each of the one or more network interfaces, and transmit the data unit, via each of the one or more network interfaces, to zero or more neighboring nodes.

36. (Original) The network device of claim 32 wherein the one or more network interfaces is configured to transmit the data units via a wireless link.

37. (Original) The network device of claim 32 wherein the data unit is a multicast data unit, and wherein the forwarding module is further configured to: store, for each neighboring node, information indicating whether the multicast data unit has been transmitted to that neighboring node.

38. (Previously Presented) A computer-readable medium containing a plurality of instructions that, when executed by at least one processor in a node that includes one or more network interfaces, causes the at least one processor to perform a method for transmitting data units in a communications network, the method comprising:

identifying one of the one or more network interfaces to transmit a data unit to another node when the data unit is received by the node or generated by the node;

subsequent to identifying one of the network interfaces, determining one of the one or more network interfaces to transmit the data unit when the data unit is ready to be transmitted by the node; and

transmitting the data unit via the determined network interface when the determined network interface corresponds to the identified network interface.

39–44. (Canceled)

45. (New) A method for transmitting data units from a node in a communications network, the node including one or more network interfaces, the method comprising:

placing a data unit in an output queue associated with at least one of the one or more network interfaces;

identifying, when the data unit reaches a head of the output queue, one or more network interfaces from which the data unit is to be transmitted; and

placing the data unit at a head of an output queue associated with each of the identified network interfaces for transmission.

46. (New) The method of claim 45, wherein placing a data unit in an output queue comprises storing a copy of the data unit in the output queue.

47. (New) The method of claim 45, wherein placing a data unit in an output queue comprises storing the data unit in a memory and storing a placeholder in the output queue.

48. (New) The method of claim 45, wherein identifying one or more network interfaces from which the data unit is to be transmitted comprises identifying neighboring nodes to receive the data unit.

49. (New) The method of claim 48, wherein identifying one or more network interfaces from which the data unit is to be transmitted comprises identifying one or more network interfaces by which the identified neighboring nodes can be reached.

50. (New) The method of claim 48, comprising transmitting the data unit to the identified neighboring nodes.